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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/319,202	06/02/1999	OSAMU SHIRASAKI	20-4576P	2596

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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	22

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Ebase

Office Action Summary	Application No.	Applicant(s)	
	09/319,202	SHIRASAKI ET AL.	
	Examiner	Art Unit	
	John L. Goff	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on ____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/9/03 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claim 3 is objected to because of the following informalities: In claim 3, line 5 after "9.8" insert - - % - - (See page 3, lines 19-22). Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitto (JP 1257031) optionally in view of Wimmer et al. (EP 663025 with U.S. Patent 5,698,300 used as the English translation).

Nitto discloses that it is known to melt/fusion bond two fluoropolymer (e.g. PTFE, PFA, FEP, EPE COPOLYMER etc. and compare with applicants specification at Page 4, line 21 thru Page 5, line 10) parts/substrates together via a process wherein a heat shrinkable outer tubular part is placed over/around a second (less shrinkable i.e. different shrinkages) inner tubular part, bonding being effected by a combination of the heat shrinking force applied by the outer part and the hot melt characteristics of both parts. (English Translation Abstract and, in the translation provided: Fig. 1 and Page 4, lines 1-25 and Example 1). It is noted Nitto is silent as to an express teaching of the coefficient of thermal shrinkage of the tubular parts as defined by applicant (at Page 7, lines 26-28). Nitto does teach the tubular parts generally have shrinkage rates in the range of 100-400%. However, the shrinkage rates taught by Nitto and the coefficient of thermal shrinkage taught by applicant are not a measure of the same parameter such that Nitto does not disclose any particular coefficient of thermal shrinkage, and Nitto is not limited to any particular coefficient of thermal shrinkage. Rather, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the coefficient of thermal shrinkage for the tubular bodies and their difference as a function of the bond strength produced as doing so would have required nothing more than ordinary skill and routine experimentation. Furthermore, it was well known in the art to use tubular bodies having

coefficients of thermal shrinkage within the claimed range wherein the coefficients of each tubular body differ by at least one percent as shown for example optionally by Wimmer et al. such that using coefficients within the claimed range would have been obvious and well within the ordinary skill of one in the art as only the expected results, i.e. various bond strengths, would be achieved.

Wimmer et al. disclose that it is known to melt/fusion bond two fluoropolymer (e.g. PTFE) parts/substrates together via a process wherein a heat shrinkable outer tubular part is placed over/around a second (less shrinkable i.e. different shrinkages) inner tubular part, bonding being effected by a combination of the heat shrinking force applied by the outer part and the hot melt characteristics of both parts. Wimmer et al. teach the tubular parts differ in their hot-air shrinkage by at least one percent, and Wimmer et al. show using tubular parts with hot-air shrinkages in the range of 2.5-5.5 % (See Examples 1-5).

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nitto and optionally Wimmer et al. as applied in paragraph 5 above, and further in view of Clabburn (GB 1250503).

Nitto and Wimmer et al. as applied above teach all of the limitations in claim 5 except for a specific teaching on how to manufacture the tubular parts with different coefficients of thermal shrinkage. It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the tubular parts having different coefficients of thermal shrinkage taught by Nitto as optionally modified by Wimmer et al. by using a well known and conventional process such as molding the tubular parts under deformation pressure as shown for example by Clabburn as only the expected results would be achieved.

Clabburn discloses a method for forming modified PTFE tubular parts wherein the method comprises subjecting the tubular parts to a deforming force, i.e. the application of pressure by an expanding mandrel. Clabburn shows tubular parts having different shrinking ratios are formed by using different amounts of deforming force, i.e. pressure (Page 1, lines 14-24 and Page 2, lines 59-78 and 119-123 and Examples 1 and 2).

7. Claims 1-4 are rejected under.35 U.S.C. 103(a) as being unpatentable over Washizu (U.S. Patent 4,800,109) optionally in view of Wimmer et al. (EP 663025 with U.S. Patent 5,698,300 used as the English translation).

Washizu discloses that it is known to melt/fusion bond two fluoropolymer (e.g. PTFE, PFA, FEP, etc. and compare with applicants specification at Page 4, line 21 thru Page 5, line 10) parts/substrates together via a process wherein a heat shrinkable outer tubular part is placed over/around a second (less shrinkable i.e. different shrinkages) inner tubular part, bonding being effected by a combination of the heat shrinking force applied by the outer part and the hot melt characteristics of both parts. (Figure 1 and Column 1, lines 44-51 and 65-68 and Column 2, lines 1-20, 29-34, and 55-56). It is noted Washizu is silent as to an express teaching of the coefficient of thermal shrinkage of the tubular parts as defined by applicant (at Page 7, lines 26-28). Washizu does teach the tubular parts have shrinkage ratios in the range of 1.3:1 to 4:1. However, the shrinkage ratios taught by Washizu and the coefficient of thermal shrinkage taught by applicant are not a measure of the same parameter such that Washizu does not disclose any particular coefficient of thermal shrinkage, and Washizu is not limited to any particular coefficient of thermal shrinkage. Rather, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the coefficient of thermal

shrinkage for the tubular bodies and their difference as a function of the bond strength produced as doing so would have required nothing more than ordinary skill and routine experimentation. Furthermore, it was well known in the art to use tubular bodies having coefficients of thermal shrinkage within the claimed range wherein the coefficients of each tubular body differ by at least one percent as shown for example optionally by Wimmer et al. such that using coefficients within the claimed range would have been obvious and well within the ordinary skill of one in the art as only the expected results, i.e. various bond strengths, would be achieved.

Wimmer et al. disclose that it is known to melt/fusion bond two fluoropolymer (e.g. PTFE) parts/substrates together via a process wherein a heat shrinkable outer tubular part is placed over/around a second (less shrinkable i.e. different shrinkages) inner tubular part, bonding being effected by a combination of the heat shrinking force applied by the outer part and the hot melt characteristics of both parts. Wimmer et al. teach the tubular parts differ in their hot-air shrinkage by at least one percent, and Wimmer et al. show using tubular parts with hot-air shrinkages in the range of 2.5-5.5 % (See Examples 1-5).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Washizu and optionally Wimmer et al. as applied in paragraph 7 above, and further in view of Clabburn (GB 1250503).

Washizu and Wimmer et al. as applied above teach all of the limitations in claim 5 except for a specific teaching on how to manufacture the tubular parts with different coefficients of thermal shrinkage. It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the tubular parts having different coefficients of thermal shrinkage taught by Washizu as optionally modified by Wimmer et al. by using a well known

and conventional process such as molding the tubular parts under deformation pressure as shown for example by Clabburn wherein only the expected results would be achieved.

Clabburn discloses a method for forming modified PTFE tubular parts wherein the method comprises subjecting the tubular parts to a deforming force, i.e. the application of pressure by an expanding mandrel. Clabburn shows tubular parts having different shrinking ratios are formed by using different amounts of deforming force, i.e. pressure (Page 1, lines 14-24 and Page 2, lines 59-78 and 119-123 and Examples 1 and 2).

Response to Arguments

9. Applicant's arguments filed 3/31/03 have been fully considered but they are not persuasive. Applicant argues, "Thus, the Nitto reference clearly teaches that the article of claim 1 is produced by the method of claim 2, and that the bonded article must use "a fluorine-containing resin powder having thermal fusing ability". Moreover, no part of the Nitto reference teaches or suggest manufacturing of the bonded article without the use of a fluorine-containing resin powder having thermal fusion ability". It is noted applicants claims are not commensurate in scope with this argument. Furthermore, Nitto teaches "Also, according to this invention, as shown in the figure, it is possible to apply fluorine-containing resin powder (5) on the outer peripheral surfaces of the end portion of medium-diameter tubular body (2). By means of this arrangement, it is possible to improve the bonding strength between medium-diameter tubular body (2) and large-diameter tubular body (3)" (Figure 3 and Page 5, lines 20-23 emphasis added). Thus, Nitto teaches it is possible (i.e. it is not expressly required) to use a fluorine-containing resin powder. Applicant further argues "The Nitto reference describes a coefficient of

thermal shrinkage (thermal shrinkage rate) of "100 to 400%"." Applicant is referred to paragraph 5 above.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **703-305-7481** (after December 2003 the telephone number will be 571-272-1216). The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

John L. Goff

JOSEPH A. TIMMERSOUT
PRIMARY EXAMINER
GROUP 1300